ABSTRACT

An adaptive equalizer with a large data rate range is provided. The equalizer comprises an equalizer core, a slicer and an automatic gain control (AGC) loop. The equalizer core is coupled to an input signal from a transmission medium and applies a transfer function to the input signal to compensate for losses incurred in the transmission medium in order to generate a core output signal. The equalizer core is also coupled to a bandwidth control signal that controls a bandwidth of the transfer function. The slicer is coupled to the core output signal and converts the core output signal to a digital output signal having a fixed digital output swing that approximates a transmission swing of the input signal prior to transmission over the transmission medium. The AGC loop is coupled to the core output signal and the digital output signal and compares the core output signal with the digital output signal in order to generate the bandwidth control signal.